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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/596,395

06/12/2006

Lutz Rapp

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K&L Gates LLP

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EXAMINER

WOLDEKIDAN, HIBRET ASNAKE

ART UNIT

PAPER NUMBER

2613

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/596,395	<b>Applicant(s)</b> RAPP, LUTZ	
	<b>Examiner</b> Hibret A. Woldekidan	<b>Art Unit</b> 2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 08 September 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 6-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 6, 7, 9 and 10 is/are rejected.
- 7) ☐ Claim(s) 8 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 June 2006 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>09/08/06, 06/12/06</u>  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

Claim 6 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. In Claim 6 states “...*a mirror that changes the angle of incidence of a light beam transmitting the WDM signal relative to the longitudinal axis of the Bragg filter, to effect a wavelength-dependent damping with variable gradient in the transmission range ...*”, it is not clear how the mirror effects a wavelength-dependent damping with variable gradient in the transmission range.

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A Person shall be entitled to a patent unless-

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000.

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Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 6,7,10 are rejected under 35 U.S.C. 102(e) as being anticipated by Wilson et al. (US 2005/0068612).

Considering claim 6 Wilson discloses an apparatus for compensating the scattering of a wavelength division multiplex (WDM) signal (**See Paragraph 63,75 i.e. compensating for Raman scattering in wdm signals**) comprising: a Bragg filter(**See Paragraph 93, fig. 12 i.e. the incoming wdm signal is guided to a diffraction grating(1223)**); and a mirror that changes the angle of incidence of a light beam transmitting the WDM signal relative to the longitudinal axis of the Bragg filter, to effect a wavelength-dependent damping with variable gradient in the transmission range(**See Paragraph 17,93-96 fig. 12 i.e. an optical filter(1200) of fig. 12 having a wdm optical signals inputted through fiber(1230) and a spectral plane structure which is an adjustable mirror(1234) that changes the angle of incidence in relative to different axis(x,y) using the axis actuators or controllers(1232,1233).**

As explained in Paragraph 93, each wavelength of the incoming beam to be diffracted into an angle corresponding to its wavelength, this shows that the presence of different gradient corresponding to each wavelength of the incoming wdm signal of a given transmission range. Further, since the adjustable mirroring unit(1234) affects the diffraction grating(1223) by changing the incident angle, this shows that the adjustable mirroring unit inherently effects each wavelength signal of the incoming beam to be diffracted into an angle corresponding to its

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**wavelength by controlling the position of the mirror. As further explained in Paragraph 96, the actuators(1232,1233) have sensing units to monitor the position of the mirror or the grating unit(whichever is movable) and provides feedback to an electronic device in order to adjust the driving voltage to maintain a desired setting).**

Considering claim 7 Wilson discloses the apparatus as claimed in claim 6, wherein the Bragg filter is arranged in a fixed position and the mirror is implemented as a first microelectromechanical system(See Paragraph 93, fig. 12 i.e. the diffraction grating is in a fixed position while the mirror(1231) is movable. Further in Paragraph 90, The movable mirror that used for beam steering can be a micro-electro-mechanical systems (MEMS)).

Considering claim 10 Wilson discloses the apparatus as claimed in claim 6, further comprising a control device that measures the power of at least two control signals or data signals of the WDM signal or the total power of the WDM signal and adjusts the scattering or damping by control of the microelectromechanical systems (See Paragraph 96,93 fig. 12 i.e. the wdm optical signals reflected by the adjustable mirror(1234) which has actuators (1232,1233) for positioning the incident signal to the grating by adjusting the mirror. The actuators(1232,1233) include sensing units to monitor the position of the movable mirror and provides feedback signals to an electronic drive circuit in order to adjust the driving voltage and maintain a constant filter setting).

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson et al. (US 2005/0068612).

Considering claim 9, Wilson discusses in fig. 12, one filter module(1200 of fig. 12) having a combination of filtering unit which is a diffraction grating(1223 of fig. 12) and a mirror(1234).

Wilson does not explicitly disclose in fig. 12 the apparatus as claimed in claim 7, wherein two mirror-filter combinations are connected in series.

However, Wilson disclose an optical network equipment(20 of fig. 4) having a plurality of dynamic filter modules(**See Paragraph 41**). Therefore it would have been a matter of design choice to connect those filtering units in series based on the design requirements.

### ***Allowable Subject Matter***

Claim 8 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Conclusions***

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hibret A. Woldekidan whose telephone number is (571)270-5145. The examiner can normally be reached on 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye can be reached on 5712723078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/H. A. W./  
Examiner, Art Unit 2613

/Kenneth N Vanderpuye/  
Supervisory Patent Examiner, Art Unit 2613